

## TO\_CHAR Function with Dates

`TO_CHAR (date, 'fmt')`

The format model:

- Must be enclosed in single quotation marks and is case sensitive
- Can include any valid date format element
- Has an *fm* element to remove padded blanks or suppress leading zeros
- Is separated from the date value by a comma

### Displaying a Date in a Specific Format

Previously, all Oracle date values were displayed in the DD-MON-YY format. The TO\_CHAR function allows you to convert a date from this default format to one specified by you.

#### Guidelines

- The format model must be enclosed in single quotation marks and is case sensitive;
- The format model can include any valid date format element. Be sure to separate the date value from the format model by a comma.
- The names of days and months in the output are automatically padded with blanks.
- To remove padded blanks or to suppress leading zeros, use the fill mode *fm* element.
- You can resize the display width of the resulting character field with the SQL\*Plus COLUMN command.
- The resultant column width is 80 characters *by* default.

## Examples

```
SELECT empno, TO_CHAR(hiredate, 'MM/YY') "İŞE GİRİŞ TARİHİ"  
FROM emp  
WHERE ename = 'BLAKE' ;
```

EMPNO	ENAME	İŞE GİRİŞ
7698	BLAKE	05/81

```
SELECT ename, empno  
TO_CHAR( hiredate , 'fmMonth DD, YYYY' ) Hiredate  
FROM emp  
WHERE deptno = 30
```

ENAME	EMPNO	HIREDATE
ALLEN	7499	Şubat 20, 1981
WARD	7521	Şubat 22, 1981
MARTIN	7654	Eylül 28, 1981
BLAKE	7698	Mayıs 1, 1981
TURNER	7844	Eylül 8, 1981
JAMES	7900	Aralık 3, 1981

6 rows selected.

```
SELECT ename, hiredate, TO_CHAR( hiredate , 'fmDY.Mon.YYY' )  
FROM EMP;
```

ENAME	HIREDATE	TO_CHAR(HIREDATE,'FMDY.MON.YYY')
SMITH	17/12/1980	ÇAR.Ara.980
ALLEN	20/02/1981	CUM.Şub.981

...

14 rows selected.

## Using TO\_CHAR Function with Dates

```
SELECT ename, hiredate,  
TO_CHAR(hiredate, 'DD Month YYYY' ) "İşe Giriş Tarihi"  
FROM EMP;
```

ENAME	HIREDATE	İşe Giriş Tarihi
SMITH	17/12/1980	17 Aralık 1980
ALLEN	20/02/1981	20 Şubat 1981
WARD	22/02/1981	22 Şubat 1981
JONES	02/04/1981	02 Nisan 1981
MARTIN	28/09/1981	28 Eylül 1981
BLAKE	01/05/1981	01 Mayıs 1981
CLARK	09/06/1981	09 Haziran 1981
SCOTT	09/12/1982	09 Aralık 1982
KING	17/11/1981	17 Kasım 1981
TURNER	08/09/1981	08 Eylül 1981
ADAMS	12/01/1983	12 Ocak 1983
JAMES	03/12/1981	03 Aralık 1981
FORD	03/12/1981	03 Aralık 1981
MILLER	23/01/1982	23 Ocak 1982

14 rows selected.

## Example

```
SELECT sysdate,  
TO_CHAR ( sysdate, 'fmDD.MM.YYYY fmHH:MI:SS PM' ) Zaman  
FROM dual ;
```

<b>SYSDATE</b>	<b>ZAMAN</b>
18/03/2007	18.3.2007 06:23:02 ÖS

```
SELECT sysdate,  
TO_CHAR ( sysdate, 'fmDD.MM.YYYY fmHH:MI:SS AM' ) Zaman  
FROM dual ;
```

<b>SYSDATE</b>	<b>ZAMAN</b>
18/03/2007	18.3.2007 06:23:02 ÖS

```
SELECT sysdate,  
TO_CHAR ( sysdate, 'fmDD.MM.YYYY fmHH12:MI:SS PM' ) Zaman  
FROM dual ;
```

<b>SYSDATE</b>	<b>ZAMAN</b>
18/03/2007	18.3.2007 06:23:02 ÖS

```
SELECT sysdate,  
TO_CHAR ( sysdate, 'fmDD.MM.YYYY fmHH24:MI:SS' ) Zaman  
FROM dual ;
```

<b>SYSDATE</b>	<b>ZAMAN</b>
18/03/2007	18.3.2007 18:23:02

```
SELECT sysdate,  
TO_CHAR ( sysdate, 'fmDD.MM.YYYY fmHH24:MI:SS AM' ) Zaman  
FROM dual ;
```

<b>SYSDATE</b>	<b>ZAMAN</b>
18/03/2007	18.3.2007 18: 23:02 ÖS

```
SELECT ename,  
TO_CHAR(hiredate, 'fmDdspth "of" Month YYYY fmHH:MI:SS PM' )  
HIREDATE  
FROM emp;
```

ENAME	HIREDATE
SMITH	Seventeenth of Aralık 1980 12:00:00 ÖÖ
ALLEN	Twentieth of Şubat 1981 12:00:00 ÖÖ

...

14 rows selected.

## Examples : YY , CC , SCC

```
SELECT TO_CHAR( TO_DATE('28-11-1942') , 'YY') Yüzyıl  
FROM dual;
```

<b>YIL</b>
42

```
SELECT TO_CHAR( TO_DATE('28-11-1942') , 'CC') Yüzyıl  
FROM dual;
```

<b>YÜZYIL</b>
20

```
SELECT TO_CHAR( TO_DATE('28-11-2942') , 'SCC') Binyıl  
FROM dual;
```

<b>BINYIL</b>
30

## Examples : D , DD , DDD

```
SELECT TO_CHAR( TO_DATE('28-11-1942') , 'fmd' ) "Day Of Week"
```

```
FROM dual ;
```

Day Of Week
6

```
SELECT TO_CHAR( TO_DATE('28-11-1942') , 'fmdd' ) "Day Of Month"
```

```
FROM dual ;
```

Day Of Month
28

```
SELECT TO_CHAR( TO_DATE('28-11-1942') , 'fmddd' ) "Day Of Year"
```

```
FROM dual ;
```

Day of Year
332



The next example outputs the Julian Day; the number of days since 31 December 4713 BC of the given date.

```
SELECT TO_CHAR( TO_DATE('28-11-2942') , 'fmJ' ) "Julian Day"
```

```
FROM dual ;
```

Julian Day
2430692

```
SELECT TO_CHAR( TO_DATE('28-11-1942') , 'fmBC' ) "BC Indicator"
```

```
FROM dual ;
```

BC Indicator
MS

```
SELECT TO_CHAR( TO_DATE('28-11-1942') , 'fmBC' ) "AD Indicator"
```

```
FROM dual ;
```

AD Indicator
MS

```
SELECT ename, hiredate, TO_CHAR(hiredate, 'fmCC')
FROM EMP ;
```

ENAME	HIREDATE	TO_CHA
SMITH	17/12/1980	20
ALLEN	20/02/1981	20

...

14 rows selected.

```
SELECT TO_CHAR( TO_DATE('18-09-1972') , 'w' ) "Week of Month"
FROM dual ;
```

Week of Month
3

```
SELECT TO_CHAR( TO_DATE('18-09-1972') , 'ww' ) "Week of Year"
FROM dual ;
```

Week of Month
38

## TO\_CHAR (datetime)

TO\_CHAR (datetime) converts *date* of DATE, TIMESTAMP, TIMESTAMP WITH TIME ZONE, or TIMESTAMP WITH LOCAL TIME ZONE datatype to a value of VARCHAR2 datatype in the format specified by the date format *fmt*. If you omit *fmt*, then *date* is converted to a VARCHAR2 value as follows:

- DATE is converted to a value in the default date format.
- TIMESTAMP and TIMESTAMP WITH LOCAL TIME ZONE are converted to values in the default timestamp format.
- TIMESTAMP WITH TIME ZONE is converted to a value in the default timestamp with time zone format.

The '*nlsparams*' specifies the language in which month and day names and abbreviations are returned. This argument can have this form:

```
'NLS_DATE_LANGUAGE = language'
```

```
CREATE TABLE date_tab (  
    ts_col          TIMESTAMP,  
    tsltz_col      TIMESTAMP WITH LOCAL TIME ZONE,  
    tstz_col       TIMESTAMP WITH TIME ZONE);
```

## Oracle date format

<b>Format mask</b>	<b>Description</b>
CC	Century
SCC	Century BC prefixed with -
YYYY	Year with 4 numbers
SYYY	Year BC prefixed with -
IYYY	ISO Year with 4 numbers
YY	Year with 2 numbers
RR	Year with 2 numbers with Y2k compatibility
YEAR	Year in characters
SYEAR	Year in characters, BC prefixed with -
BC / AD	BC/AD Indicator *
Q	Quarter in numbers (1,2,3,4)
MM	Month of year 01, 02...12
MONTH	Month in characters (i.e. January)
MON	JAN, FEB
WW	Weeknumber (i.e. 2)
W	Weeknumber of the month (i.e. 3)
IW	Weeknumber of the year in ISO standard.
DDD	Day of year in numbers (i.e. 234)
DD	Day of the month in numbers (i.e. 28)
D	Day of week in numbers(i.e. 7)
DAY	Day of the week in characters (i.e. Monday)
FMDAY	Day of the week in characters (i.e. Monday)
DY	Day of the week in short character description (i.e. SUN)
J	Julian Day (number of days since January 1 4713 BC, where January 1 4713 BC is 1 in Oracle)
HH	Hour number of the day (1-12)
HH12	Hour number of the day (1-12)
HH24	Hour number of the day with 24Hours notation (1-24)
AM	AM or PM
PM	AM or PM
MI	Number of minutes (i.e. 59)
SS	Number of seconds (i.e. 59)
SSSS	Number of seconds this day.

# TO\_DATE Function

Converts a character string to a date format.

`TO_DATE (char[, 'fmt'])`

## TO\_NUMBER and TO\_DATE Functions

You may want to convert a character string to either a number or a date. To accomplish this task, you use the TO\_NUMBER or TO\_DATE functions. The format model you choose will be based on the previously demonstrated format elements.

### Example

Display the names and hire dates of all the employees who joined on February 22, 1981.

```
SELECT ename, hiredate
FROM emp
WHERE hiredate =
TO_DATE ('Şubat 22, 1981', 'Month dd, YYYY');
```

ENAME	HIREDATE
WARD	22/02/1981

## Elements of Date Format Model

Time elements format the time portion of the date.

HH24:MI:SSAM	15:45:32 PM
--------------	-------------

Add character strings by enclosing them in double quotation marks.

DD "Of " MONTH	12 of OCTOBER
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Number suffixes spell out numbers.

Ddspth	fourteenth
--------	------------

### Time Formats

Element	Description
AM or PM	Meridian indicator
A.M. or P.M.	Meridian indicator with periods
HH or HH12 or HH24	Hour of day or hour (1 - 12) or hour (0-23)
MI	Minute (0-59)
SS	Second (0-59)
SSSSS	Seconds past midnight (0-86399)

## Oracle to\_date function

The oracle TO\_DATE function converts a string in a specified format to an Oracle date format.

### Syntax

<code>to_date('formatted string');</code>	returns a date using the default oracle date format
<code>to_date('formatted string','format string');</code>	returns a date using the format string specified
<code>to_date('formatted string','format string','nls description');</code>	returns a date using the format string specified and using the specified NLS settings

### Examples:

```
SELECT to_date('01-OCA-2007 ')  
FROM dual;
```

TARIH
01/01/2007

```
SELECT to_date('01-01-2007' , 'DD-MM-YYYY') Tarih  
FROM dual;
```

TARIH
01/01/2007

```
SELECT to_date('31-12-2006 23:34:59' , 'DD-MM-YYYY HH24:MI:SS ') Tarih
```

FROM dual;

TARİH
31/12/2006

```
SELECT to_date('01-JAN-99', 'DD-MON-YY', 'nls_date_language = American') Tarih
```

FROM dual;

TARİH
01/01/2099

```
SELECT to_date('01-OCA-99', 'DD-MON-YY', 'nls_date_language = Turkish') Tarih
```

FROM dual;

TARİH
01/01/2099

```
SELECT  
to_date ('2003/07/09' , 'yyyy/dd/mm' )  
FROM dual ;
```

TO_DATE('2
07/09/2003

```
to_date (string1, [format_mask], [nls_language])  
to_date ('2003/07/09', 'yyyy/mm/dd');  
/*July 9, 2003*/
```

```
to_date ('070903', 'MMDDYY');  
/*July 9, 2003*/
```

```
to_date ('20020315', 'yyyymmdd');  
/*Mar 15, 2002*/
```



```
SELECT  
to_date ('93/07/09' , 'yy/dd/mm' )  
FROM dual ;
```

TARİH
07/09/2093

## Oracle date format

With the functions `to_char` and `to_date`, a date format can be used.

Example:

```
select to_char(sysdate,'DD/MM/YYYY HH24:MI:SS') from dual;
```

will return something like: 24/03/2006 14:36:43

## Oracle date format

```
SELECT TO_DATE('Aralık 15, 1998' , 'Month DD, YYYY') Tarih  
FROM dual ;
```

TARİH
15/12/1998

```
SELECT TO_DATE('Aralık 15, 98' , 'Month DD, YY') Tarih  
FROM dual ;
```

TARİH
15/12/2098

```
SELECT TO_DATE('Aralık 15, 98' , 'Month DD, RR') Tarih  
FROM dual ;
```

TARİH
15/12/1998

```
SELECT TO_DATE('Aralık 15, 07' , 'Month DD, RR') Tarih  
FROM dual ;
```

TARİH
15/12/2007

## RR Date Format

Current Year	Specified Date	RR Format	YY Format
1995 1995 2001 2001	27-OCT-95 27-OCT-17 27-OCT-17 27-OCT-95	1995 2017 2017 1995	1995 1917 2017 2095

		If the specified two-digit year is:	
		0-49	50-99
If two digits of the current year are:	3-49	The return date is in the current century	The return date is in the century before the current one
5	0-99	The return date is in the century after the current one	The return date is in the current century

### The RR Date Format Element

The RR date format is similar to the YY element, but it allows you to specify different centuries. You can use the RR date format element instead of YY, so that the century of the return value according to the specified two-digits of the current year. The table on the slide summarizes the behavior of the RR element.

Current year	Given Date	Interpreted (RR)	Interpreted (YY)
1994	27-OCT-95	1995	1995
1994	27-OCT-17	2017	1917
2001	27-OCT-17	2017	2017

# **SYSDATE = CURRENT\_DATE**

## **and DUAL**

**SYSDATE** is a date function that returns the current date and time. It is customary to select SYSDATE from a dummy table called **DUAL**.

```
select to_char(sysdate, 'DD-Mon-YYYY HH24:MI:SS') as "Current Time"  
from dual;
```

<b>Current Time</b>
18-Mar-2007 17:37:10

```
select to_char(sysdate, 'Dy DD-Mon-YYYY HH24:MI:SS') as "Current Time"  
from dual;
```

<b>Current Time</b>
PAZ 18-MAR-2007 05:46:41

```
SELECT TO_CHAR(CURRENT_DATE, 'Dy DD-MON-YYYY HH:MI:SS')  
FROM dual;
```

<b>TO_CHAR(CURRENT_DATE, 'DD-MON-YYYYHH:MI:SS')</b>
PAZ 18-MAR-2007 05:46:41

## Example

Display the date of the next Friday that is six months from the hiredate. The resultant date should appear as Friday, March 12th 1982. Order the results by hiredate.

```
SELECT
TO_CHAR (NEXT_DAY (ADD_MONTHS (hiredate, 6), 'CUMA')
, 'fmDay, Month ddth, YYYY' )
"Next 6 Months Review"
FROM emp
ORDER BY hiredate ;
```

Next 6 Months Review
Cuma, Haziran 19th, 1981
Cuma, Ağustos 21st, 1981
Cuma, Ağustos 28th, 1981
Cuma, Ekim 9th, 1981
Cuma, Kasım 6th, 1981
Cuma, Aralık 11th, 1981
Cuma, Mart 12th, 1982
Cuma, Nisan 2nd, 1982
Cuma, Mayıs 21st, 1982
Cuma, Haziran 4th, 1982
Cuma, Haziran 4th, 1982
Cuma, Temmuz 30th, 1982
Cuma, Haziran 10th, 1983
Cuma, Temmuz 15th, 1983

14 rows selected.

## Practice 3

1. Write a query to display the current date. Label the column `Date`.
2. Display the employee number, name, salary, and salary increase by 15% expressed as a whole number. Label the column `New Salary`. Save your SQL statement to a file named `p3q2.sql`.
3. Run your query in the *file* `p3q2.sql`.

### Practice 3 (continued)

7. Write a query that produces the following for each employee.  
  
<employee name> earns <salary> monthly but wants <3 times salary >.  
Label the column Dream Salaries.

If you *have* time, complete the following exercises:

8. Create a query to display name and salary for all employees. Format the salary to be 15 characters long, left-padded with \$. Label the column SALARY.

### Practice 3 (continued)

If you want extra challenge, complete the following exercises:

11. Create a query that will display the employee name and commission amount. If the does not earn commission, put "No Commission". Label the column COMM.
  
12. Create a query that displays the employees' names and indicates the amounts of their salaries through asterisks. Each asterisk signifies a hundred dollars. Sort the data in descending order of salary. Label the column EMPLOYEE\_AND\_THEIR\_SALARIES.